

TODORI ET AL. -- 09/819,621
Attorney Docket: 008312-0280037

REMARKS

Claims 1-5, 7-14, 16-19, 21-24 and 26-28 are pending. By this Amendment, claims 1, 10, 19 and 24 are amended. Reconsideration in view of the above amendments, enclosed Declaration and following remarks is respectfully requested.

Claims 1-5, 7-14, 16-19, 21-24 and 26-28 were rejected under 35 U.S.C. § 103(a) over Iida et al. (EP 0 580 436 A2) in view of Murray et al. and Liz-Marzan et al. (WO 99/21934). The rejection is respectfully traversed.

Each of independent claims 1, 10, 19 and 24 recites, amongst other features, that the films include a super-resolution film containing a polymer matrix and particles each consisting of a semiconductor particle and an organic group covalently bonded thereto. The organic group covalently bonded to the semiconductor particle is directly in contact with the polymer matrix and wherein even in the case where a part of polymer molecules in the polymer matrix is covalently bonded to the semiconductor particle, a ratio of the polymer molecules bonded to the semiconductor particle is 1 mol % or less of the entire polymer molecules in the polymer matrix.

During the December 18, 2003 interview, the undersigned and Examiner Angebranndt discussed whether semiconductor particles bonded with SiO₂ through an organic group can provide satisfactory super-resolution films. Examiner Angebranndt noted that samples 2A and 2E of the instant application include an R group, whereas samples 2B, 2C, 2D and 2F do not include an R group. Examiner Angebranndt noted in the Interview Summary that optical performance data of samples 2A and 2E may obviate the rejection based in part upon Iida et al.

The enclosed Declaration under 37 C.F.R. § 1.132 of Kenji Todori clearly establishes that Liz-Marzan et al. fail to cure the deficiencies of Iida et al. and Murray et al. discussed during the December 18, 2003 interview and in the February 2, 2004 response. In particular, as discussed in the Declaration, although it is clear that the absorption saturation characteristics of sample 2A are clearly superior to those of samples 2B and 2D, the saturation characteristics of sample 2A are equal to those of sample 2C. Because sample 2A uses a shorter wavelength than sample 2C and has a 10% shorter absorption saturation life than sample 2C, one of ordinary skill in the art would expect the transmittance of sample 2A to be smaller than that of sample 2C. Sample 2A and sample 2C have the same transmittance

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of 16%, however. Sample 2A has the same transmittance as sample 2C because it includes CdSe particles including an AMEO group covalently bonded thereto.

As also shown by the enclosed Declaration, sample 2E also uses CdSe particles including an AMEO group covalently bonded thereto. Because the $D_{\text{mod}}/D_{\text{Bohr}}$ of sample 2E is less than 0.25 the absorption saturation characteristics of the sample are inferior to those of sample 2A. However, the absorption saturation characteristics of sample 2E are superior to those of sample 2B having a similar $D_{\text{mod}}/D_{\text{Bohr}}$ under the same wavelength λ , thus proving the unexpected results achieved by using CdSe particles including an AMEO group covalently bonded thereto.

Reconsideration and withdrawal of the rejection of claims 1-5, 7-14, 16-19, 21-24 and 26-28 are respectfully requested.

In view of the above remarks, it is respectfully submitted that all of the claims are allowable and the entire application is in condition for allowance.

Should the Examiner believe that anything further is desirable to place the application in condition for allowance, the Examiner is invited to contact the undersigned at the telephone number listed below.

Respectfully submitted,
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Attachment:
Rule 132 Declaration